1.0 INTRODUCTION

This report, *The Initial Surface Water Quality Watershed Characterization and Assessment Report for the Wallkill River Watershed Management Area (WMA 02)*, represents an initial step in the watershed management planning process that summarizes existing information related to surface water quality in WMA 02 that was readily available to the Department. This report serves two main purposes: 1) it is a preliminary step towards developing a comprehensive watershed characterization and assessment report for WMA 02; and 2) it compiles preliminary information to help define a set of surface water quality issues including the development of Total Maximum Daily Loads (TMDLs) for the impaired waters within WMA 02. It's intended audience within the Watershed Management area includes: the Technical Advisory Committee (TAC), the TMDL Work Group, and technical staff within NJDEP. A non-technical summary for general readership will subsequently be developed by NJDEP's Division of Watershed Management (DWM) and provided to the Watershed Management Area's Public Advisory Committee (PAC).

This Surface Water Quality Characterization Report relies on information readily available to the Department and was gathered from published reports, ambient and site-specific monitoring data, and our geographic information system (GIS). Regulatory and other program reports and databases were used to generate maps and summarize information regarding point and non-point pollution sources (i.e., contributing factors). Subsequent to this report, emphasis will be placed on identifying and integrating other data sets (including stakeholder data) through the ongoing watershed management planning process. It is expected that additional information will be required to complete the analysis, including monitoring, modeling, and a more refined assessment of potential contaminant loads. The report makes extensive use of GIS maps in conveying surface water quality characterization data (e.g. point and nonpoint sources of pollution, known contaminated sites, roads, population, and pesticide applications) as deemed appropriate.

This Surface Water Quality Characterization and Assessment Report is the surface water quality component of a much broader assessment to be provided in a subsequent Watershed Characterization and Assessment Report (WCA) for WMA 02. The WCA Report will include new and additional data, findings and other contributions from the Department and the WMA 02 stakeholders, and will comprehensively address watershed issues such as ground water and drinking water quality, water quantity, land and living resources, contributing factors, existing and planned management measures, watershed assessment, and data management/data assessment needs. The expanded report will be viewed as a "living document" and will be expected to change over time based on continued input from WMA 02 stakeholders. Such changes will serve as the technical basis for the iterative planning cycle. In the future, an INTERNET version of this and other related documents will be made available to the general public as a Watershed Webpage.

1.1 BACKGROUND

New Jersey's watershed management approach relies on sound science and a collaborative stakeholder process to protect, maintain and improve the water resources of the state. In order to achieve this goal, the New Jersey Department of Environmental

Protection (Department) intends to employ a collaborative planning process by which government agencies and the watershed community can work together to identify and address water resource issues and concerns on a geographic basis. The development of a WCA Report is one of the first steps in this collaborative planning process. Watershed characterization and assessment will enable the Department and its partners to target and prioritize watershed issues to be addressed through the watershed management process. Data gaps identified during this phase may require new monitoring and modeling efforts to both verify current water resource trends; to project future trends; and to identify water resource issues, problems and pollution sources.

The resulting detailed watershed characterization and assessment will identify a set of priority issues of concern for each watershed management area (WMA), to be addressed by the watershed management area plan (WMAP). To facilitate efficient compilation of characterization and assessment information and to mange resources in the planing process DEP has partitioned the State into twenty WMAs (See Figure 1.1-1). Specific water resource goals and measurable environmental objectives (e.g. specific percent reduction in pollutant loading, or elimination of projected water supply deficits, over a specified time period) will be developed for each issue. In certain WMAs watershed goals will be formalized through the development of Total Maximum Daily Loads (TMDLs). TMDLs represent the assimilative or carrying capacity of the receiving water, taking into consideration point and nonpoint sources of pollution, as well as surface water withdrawals and ground water and atmospheric deposition impacts on receiving waters. TMDLs are an important planning tool, since they can be used to explore different load allocation strategies and to reserve future capacity of receiving water in order to meet certain watershed protection goals.

Where TMDLs are required to address documented surface water quality impairment; a TMDL is developed as a mechanism for identifying all the contributors to surface water quality impacts and for setting goals for load reductions for specific pollutants as necessary to meet surface water quality standards. Allocations are made to the varying sources contributing to the water quality problem in order to reduce the total pollutant load received by the waterbody. Load reduction goals established through TMDLs are achieved through the issuance of wasteload allocations (WLAs) for points source discharges, load allocations (LAs) for nonpoint source discharges, and water allocations for surface water withdrawals.

In some WMAs the TMDLs may still be required even though the receiving waters are predominantly impacted by nonpoint source pollution. In such cases, the TMDL would consist mainly of the load allocation for the major categories of nonpoint source pollution contributors along with an implementation plan for best management practices (BMPs) for stormwater management and nonpoint source pollution control, headwaters protection practices, or other mechanisms for addressing the priority issues of concern.

The WCA Report for WMA 02 will ultimately provide the scientific basis for establishing a planning baseline that will be used by the Department and the WMA 02 PAC to identify and prioritize issues of concern and to establish environmental goals and objectives for the watershed management area. It will serve as a technical support document for the watershed management area plan, which will identify regulatory and non-regulatory management measures, responsibilities and funding needed to attain the environmental goals and objectives. The WMAP will include: a summary of the baseline

information; water resources trends and priority concerns; watershed goals and objectives; selected management strategies, including pollution trading agreements as appropriate; and implementation responsibilities and schedules.

Active involvement of watershed stakeholders is essential to the successful development of a WMAP. A partnership is being formed in WMA 02 that includes representatives of federal, state, regional, and local agencies, academics, citizens, business and industry, water purveyors, dischargers, agriculturists, environmental and public interest groups. The PAC including one or more technical subcommittees will provide a formal avenue for this partnership to work with the Department on expanding and refining this initial Surface Water Quality Characterization Report into a comprehensive Watershed Characterization and Assessment Report through the watershed management planning process.

In presenting this report, the Department recognizes that the preliminary data and findings presented here are incomplete and need to be expanded and refined through a collaborative stakeholder process. However, by compiling and evaluating the Department's own database for information and trends pertinent to the surface water quality issues in WMA 02, the report provides information to the TAC, TMDL workgroup and DEP technical staff who will inform/advise the PAC which will then have the information necessary to begin implementing the watershed management approach presented in the *Draft Statewide Watershed Management Framework Document for the State of New Jersey* (January 1997).

1.2 NJ Environmental Performance Partnership (NEPPS) System

The State of New Jersey is enhancing its implementation of results-based environmental management through its continued participation in the National Environmental Performance Partnership Agreement (PPA) with EPA (NJDEP 1999). NEPPS emphasizes management for environmental results through its use of long-term goals and indicators as measures of environmental progress. The NEPPS process also places greater emphasis on scientific assessments of trends in environmental quality, and through its identification of key issues, provides many elements for use in long-term environmental strategic planning. The PPA covers nine goal areas: global climate change, air quality/radiation, water quality, land & natural resources, site remediation, solid/hazardous waste, pesticides, environmental mercury and open & effective government.

The NEPPS goals for water quality are summarized below.

Table 1.2 Water Quality PPA Goal & Subgoal Listing
SW01: Aquatic life designated use – protect & enhance aquatic life designated use
SW02: Recreational designated uses - protect recreational designated uses in tidal/non-tidal waters
SW03: Fish & shellfish consumption – protect fish & shellfish consumption designated use
SW04: Surface water supply designated use – protect surface water supply designated use
GW01: Ground water quality designated uses – ground water quality will meet all standards for designated uses & ground water discharging to surface water will not adversely impact surface water
GW02: Ground water quantity designated uses – protect & insure adequate ground water quantity for designated uses & for base flow to surface waters
DW00: Safe drinking water – every person in NJ will have safe drinking water
DW01: Source water protection – source water used for drinking water will be protected from Pollution
DW02: **Waterborne infectious disease** – the consumption of drinking water shall not cause detectable waterborne infectious disease
DW03 Lead – every person should drink water with lead contamination less than 15ppb
DW04: Nitrate – every person should drink water with nitrate contamination less than 10ppm
DW05: Mercury – every person should drink water with mercury contamination less than 2ppb
DW06: VOCs – every person in NJ should drink water with VOC concentrations less than the MCLs
DW07: Disinfection by-products – every person in NJ should drink water that contains the minimum concentration of disinfection by-products without compromising microbiological safety
DW08: Radionuclides – every person should drink water with radiological concentrations less than the MCLs
DW09: Adequate ground & surface water quantity – protect & insure adequate ground & surface water quantity for drinking water use